

RESUME

STAGG

ALAN K. STAGG, PG, AIMA PRINCIPAL ECONOMIC GEOLOGIST



In February 1975, Mr. Stagg founded Alan K. Stagg & Associates, Inc., to provide geologic consulting services to the natural resource industry. In September 1979, he founded Stagg Engineering Services, Inc., to provide engineering and surveying services. Shortly thereafter all services were consolidated into the engineering company. To more accurately reflect the broad-based range of services now provided by the company, Stagg Engineering's name was changed to Stagg Resource Consultants, Inc. Mr. Stagg is experienced in the development, implementation, and management of large, complex consulting projects involving the selection and coordination of a variety of professionals and support staff. With 42 years experience, he is the firm's lead professional on jobs relating to the appraisal of natural resource-bearing properties and operations; the economic evaluation of mineral and energy fuel deposits; litigation support and expert testimony; and industry cost, capacity, and pricing studies. He is a registered professional geologist in 14 states and a certified mineral appraiser.

PROFESSIONAL EXPERIENCE

For more than 30 years, Mr. Stagg has continued to expand his consulting firm's services in the areas of property and reserve evaluation; the operational and economic analysis of natural resource producing companies; the preparation of marketing, costing, and pricing studies for a variety of mineral resources and fuels; the preparation of environmental site assessments and audits; the appraisal of mineral properties and operations; and litigation support and expert testimony.

His experience in the **evaluation and analysis** of mining operations has been acquired from the numerous acquisition programs in which he has participated during both his tenure in industry and from projects conducted in his consulting practice. His experience ranges from preliminary evaluations of operations that are potential candidates for acquisition through in-depth evaluations made during option phases and the extremely detailed evaluations required during due diligence programs. Specific areas of experience gained through this work include reserve and environmental assessments and audits, the evaluation of operating and management practices, and the preparation of detailed pro forma cost and cash flow projections.

Mr. Stagg was instrumental in establishing his firm's service area involving the preparation of **industry cost, capacity, and pricing studies** on both local and regional bases. The development of this service area was accomplished by incorporating such disciplines as statistics, economics, and financial analysis into

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the firm's existing professional and technical expertise. Examples of such studies include a coal cost/capacity study and a ten-year coal cost and pricing study—both covering the central portion of the Appalachian Coal Field, and the preparation of numerous supply and demand analyses in the course of his career for a variety of commodities.

His experience in conducting **environmental site assessments and audits**, generally restricted to mining-related sites, includes a diversity of properties located throughout the U.S. with an emphasis on large properties with complex operating histories. He has designed, implemented, and supervised Phase I Environmental Site Assessments on properties ranging in size from less than an acre to a property containing 300 thousand acres of surface and five million acres of mineral ownership lying in seven states.

Mr. Stagg is particularly experienced in **project development and management**. Examples of his larger projects include the development of a coal-mining operation in West Virginia; the investigation, evaluation, and development of an oil and gas acquisition program in Oklahoma and Texas for a corporate client; the filing of concession applications and the development and implementation of a placer gold prospecting and sampling program in the Republic of Ecuador; and the management of a small gold-mining operation in Colorado.

Mr. Stagg's experience in **appraisals** ranges from work completed on a variety of coal, oil, and gas producing properties; operations involving quarries, sand pits, and clay operations; and metallic mineral deposits. Appraisals which he has include those of the Rock of Ages granite quarries in Vermont and Quebec, the kaolin operations of Freeport Minerals in Georgia, the trona operations of a major U.S. producer, the \$100+ million oil and gas subsidiary of a major public company, the mineral properties involved in an exchange of assets between Hanson Industries and Santa Fe Pacific Corporation, the shares in a construction and quarrying company in Kentucky, the simultaneous appraisal of 36 crushed stone and aggregate producing properties in 11 states; the phosphate and potash reserves in the merger of IMC Global and Cargill Crop Nutrition's operations; and a variety of undeveloped and developed coal properties throughout the U.S.

Mr. Stagg provides **expert witness and litigation support** for law firms involved in natural resource litigation and arbitration. He has participated as an expert witness in more than 80 matters, testifying on reserve/resource determination, lost coal issues, operational and cost issues, contractual issues, hydrologic issues, economic feasibility, and valuation issues in a variety of venues throughout the U.S. Examples of cases in which he has provided these services include three complex suits involving the Kaiser Steel bankruptcy, two suits involving a series of coal-related limited partnerships, a variety of lost coal claims, the valuation of the

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shares in a natural resource-holding company in a dissenting shareholder's action; a number of condemnation and takings cases; and a claim of tortious interference and resulting damages in the breach of a coal sales contract. He has also served as a party-selected arbitrator in a number of arbitration proceedings.

During the early period of his firm, Mr. Stagg developed and implemented coal acquisition programs for a number of major corporate clients, conducted detailed reserve studies on various coal properties, and conducted a variety of regional studies involving coal transportation, marketing, and related items. Other work during this period included such projects as the investigation and evaluation of uranium and tungsten prospects in the western United States and providing consulting services in the central Tennessee zinc district.

In the late 1970's, Mr. Stagg expanded his consulting activities and diversified the services his firm provided. In January 1980, he incorporated Stagg Engineering Services, Inc. and simultaneously acquired a professional surveying firm in Tennessee. The affiliated consulting firms provided geologic, engineering, surveying, acquisition, and technical services to a broad spectrum of the natural resource industry. In 2001, Mr. Stagg changed his firm's name to Stagg Resource Consultants, Inc., a name that more adequately reflects the expansion of the firm's services in economic evaluation and analysis, appraisal, litigation support, and cost, capacity and pricing studies.

Prior to beginning his consulting practice, Mr. Stagg was employed by the New Jersey Zinc Company from June 1964 to January 1975. His initial assignment was geologist in the company's newly-begun zinc exploration program in central Tennessee and southern Kentucky, where his responsibilities included supervising diamond core drills, logging and sampling core, logging and interpreting cuttings, and negotiating for mineral leases. In July 1968, having become resident geologist, he was given the responsibility for the supervision of the exploration program that included twenty-five diamond core drills and involved the management of three field offices. These offices employed approximately twenty-five professional, technical, and secretarial personnel and as many as fifteen contract landmen. In the course of this program, more than 600,000 acres of mineral rights were leased and approximately one million feet of core drilled. This program resulted in the discovery and development of a major zinc district.

During 1971, Mr. Stagg designed and implemented a coal acquisition program in the Appalachian Coal Field for the Zinc Company and was responsible for locating, evaluating, and negotiating for the acquisition of coal properties. In September 1972, he was appointed regional geologist, and the coal program was expanded to include the western United States. In October 1974, he was appointed manager – coal. During the course of the coal program, Mr. Stagg also

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worked with several of the Zinc Company's affiliated companies in their coal programs.

EDUCATION

Mr. Stagg received the Bachelor of Science degree in geology from the University of Tennessee in 1963. He was enrolled in the university's masters program for one year prior to beginning his professional career. Continuing education includes the following workshops, short courses and seminars:

- *AAI and Liability: Prepare, Preserve and Protect*—Environmental Data Resources, Inc. workshop (2005)
- *Basic Carbonate Geology*—Petroleum Technology Transfer Council workshop (2005)
- *Taxation of Mining Operations*—Ernst & Young LLP annual short course (2004)
- *Economic and Financial Analysis* – Stagg Resource Consultants, Inc. workshop for its staff and associates (2004)
- *Economic and Financial Analysis – Successful Development, Practical Application*—Rocky Mountain Coal Mining Institute annual short course (2004)
- *Taxation of Mining Operations*—Ernst & Young LLP annual short course (2003)
- *Mining Costs: Identifying, Understanding, and Controlling Them*—Rocky Mountain Coal Mining Institute annual short course (2003)
- *Fundamentals of Geology and Applied Geology*—Pennsylvania Council of Professional Geologists annual short course (2003)
- *Environmental Issues in an Evolving World: Staying Abreast of Mining Industry Needs*—Rocky Mountain Coal Mining Institute annual short course (2002)
- *Mining Hydrology*—Society for Mining, Metallurgy, and Exploration short course (2001)
- *A Review of Geology for the Practicing Geologist*—Pennsylvania Council of Professional Geologists annual short course (2001)
- *Powder River Basin Coal Use*—Western Coal Council and PHB Hagler Bailly seminar (2000)
- *Standards of Professional Practice—Part A (USPAP)*—Utah Chapter of the Appraisal Institute course (1995)

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- *Mine and Quarry Valuation*—The International Association of Assessing Officers workshop (1994)
- *Karst Hydrogeology*—Environmental Education Enterprises short course (1993)
- *The Legal Implications of Environmental Site Assessments*—The National Water Well Association short course (1992)
- *Environmental Auditing*—Federal Publications short course (1989)
- *Coal Property Acquisition and Technical Updates*—Kentucky Institute for Mining and Mineral Research seminar
- *Annual mineral law seminars*—University of Kentucky College of Law
- *Cost Estimating*—West Virginia University short course (1981)
- *Finance and Accounting for the Non-Financial Executive*—Wharton School of Business short course (1979)
- *Economic Evaluation and Investment Decision-Making Methods*—Colorado School of Mines short course (1978)
- *Well logging Techniques and Analysis*—University of Tennessee at Nashville short course (1970)
- *Three-hour course in statistics*—Middle Tennessee State University (1967)
- *Carbonate Petrology*—University of Missouri short course (1966)

PROFESSIONAL MEMBERSHIPS

Mr. Stagg holds membership in the following professional organizations:

- The Society of Economic Geologists
- Society for Mining, Metallurgy, and Exploration, Inc.
- The Appalachian Geological Society
- American Institute of Minerals Appraisers
(Treasurer – 2004, 2005)

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ASSOCIATION MEMBERSHIPS

Through his firm or individually, Mr. Stagg holds membership in the following industry associations:

- Colorado Mining Association
- Illinois Mining Institute
- Kanawha Valley Mining Institute, Inc.
- Kentucky Coal Association
(Member – Board of Directors, 1991 through 2003)
- National Stone, Sand and Gravel Association
- Northwest Mining Association
- Rocky Mountain Coal Mining Institute
(Continuing Education Chair, 2002 through 2004)
- West Virginia Coal Association
- West Virginia Land & Mineral Owners Council

PROFESSIONAL REGISTRATIONS

Mr. Stagg is a Registered or Licensed Professional Geologist in the following states:

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| • Alabama | — | Registration No. 623 |
| • Arkansas | — | Registration No. 1258 |
| • Illinois | — | Registration No. 196-000820 |
| • Indiana | — | Registration No. 2059 |
| • Kentucky | — | Registration No. 953 |
| • New Hampshire | — | Registration No. 719 |
| • North Carolina | — | Registration No. 943 |
| • Pennsylvania | — | Registration No. PG-000787-G |
| • Tennessee | — | Registration No. 607 |
| • Texas | — | Registration No. 1191 |
| • Utah | — | Registration No. 5326440-2250 |

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- Virginia — Registration No. 512
- Washington — Registration No. 1937
- Wyoming — Registration No. PG-761

PROFESSIONAL CERTIFICATIONS

Mr. Stagg holds the following certifications:

- Certified Minerals Appraiser No. 2003-1
American Institute of Minerals Appraisers
- State Registered Appraiser No. SR2978N
Arkansas Appraiser Licensing and Certification Board

WORKSHOP AND SEMINAR INSTRUCTION

Mr. Stagg has participated as an instructor at the following workshops and seminars:

- Short Course – *Taxation of Mining Operations*
Presenter on resource/reserve classification systems, public reporting issues, and reserve valuation techniques at annual short course presented by Ernst & Young LLP, Tempe, Arizona, November, 2004.
- Short Course -- *Economic and Financial Analysis – Successful Development, Practical Application*
Chairman and instructor for an IACET-accredited short course presented at the Rocky Mountain Coal Mining Institute's 100th Annual Meeting and Convention, Snowbird Resort, Utah, June 2004.
- Short Course – *Taxation of Mining Operations*
Presenter on resource/reserve classification systems, public reporting issues, and reserve valuation techniques at annual short course presented by Ernst & Young LLP, San Francisco, California, October 2003.

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- Short Course—*Mining Costs: Identifying, Understanding, and Controlling Them*

Chairman and an instructor for an IACET-accredited short course presented at the Rocky Mountain Coal Mining Institute's 99th Annual Meeting and Convention, Copper Mountain, Colorado, June 2003

- Short Course—*Environmental Issues in an Evolving World: Staying Abreast of Mining Industry Needs*

Chairman and an instructor for an IACET-accredited short course presented at the Rocky Mountain Coal Mining Institute's 98th Annual Meeting and Convention, Breckenridge, Colorado, June 2002

- Workshop—*The Economic Evaluation of Mineral Properties*

Instructor to representatives of the Ministry of Mines and Geology, People's Republic of China, Beijing, China, December 1997

- Workshop—*The Economic Evaluation of Mineral Properties*

Instructor to delegation from the Ministry of Mines and Geology, People's Republic of China, Helena, Montana, October 1997

Additionally, Mr. Stagg has participated as a course instructor in the following seminar:

- ES 300 Environmental Science Seminar II

Two modules on Environmental Site Assessments and Audits
Marshall University, Huntington, West Virginia

PUBLICATIONS/PROFESSIONAL PAPERS

Mr. Stagg has authored the following published papers:

- *Coal as a Competing Fuel Source, Natural Gas & Electricity*, Hoboken, New Jersey, January 2006, pp. 13-18
- *The Appraisal of Mining Enterprises: Understanding and Meeting the Challenges, The Journal of Business Valuation*, Toronto, Ontario, Canada, October 2002, pp. 255-269
- *Safety in the Coal Industry – A Perspective, American Coal*, Arvada, Colorado, April 2003, pp. 39-41.

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- *Industry Review, End of a Century, World Coal*, Farnham, Surrey, UK, December 1999, pp. 8-13.
- *U.S. East Coast Report, World Coal*, Farnham, Surrey, UK, August 1999, pp. 10-16.
- *Western U.S. Coal: Investing in the Future, World Coal*, Farnham, Surrey, UK, June 1998, pp. 12-20.
- *Supply & Cost Dynamics for U.S. Coal, World Coal*, Dorking, Surrey, UK, June 1996, pp. 40-47.
- *A Contemporary View of Compliance Steam Coal, The Mining Record*, Englewood, Colorado, July 1995, p. 8.

Mr. Stagg has authored or co-authored the following unpublished papers:

- *The Big Picture: Current and Future Coal Economics*, presented at the Institute for Rural Journalism and Community Issues' conference titled "Covering Coal – A Conference for Journalists in Central Appalachia," South Charleston, West Virginia, November 18, 2005.
- *Factors Influencing Fuel Supply Patterns*, presented at EUCI's conference titled "Coal: Volatile Markets & New Fuel Supply Patterns, Strategies for Addressing Coal Markets in Flux," Denver, Colorado, February 23, 2005.
- *The Next Generation of Coal Reserves: Will We Know Them When We See Them*, presented at Platts' 12th Annual Coal Properties and Investment Conference, Bal Harbour, Florida, March 15, 2004.
- *Reserves: The Cornerstone of Any Mineral Appraisal*, presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Denver, Colorado, February 24, 2004.
- *The Appraisal of Mining Enterprises: Understanding and Meeting the Challenges*, presented at the ASA/CICBV 5th Joint Advanced Business Valuation Conference, Orlando, Florida, October 25, 2002.
- *Leasehold Estates and the Right to Mine: Obtaining Full Value in the Condemnation of Mining Properties*, presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Phoenix, Arizona, March 2, 2002
- *Coal Supply Developments in Utah and Western Colorado*; presented at Western Coal Council's 2001 Spring Pacific Coal Forum, Park City, Utah, June 5, 2001.

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- *Standards of Value and Appraisal Techniques—Making the Appropriate Selection*; presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Denver, Colorado, February 27, 2001.
- *Operating Issues Related to Mountaintop Removal and Reclamation in West Virginia*, presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Salt Lake City, Utah, March 1, 2000.
- *Powder River Basin Coal Leases: The Next Generation*, presented at the Western Coal Council 1999 Coal Market Strategies meeting, Santa Fe, New Mexico, October 12, 1999.
- *Montana's Northern Powder River Basin: Whither Thou Goest?*, presented at the Western Coal Council 1998 Spring Coal Forum, Billings, Montana, June 18, 1998.
- *Below Drainage Coal Beds: The Past or the Future?*, presented at Coal Outlook's Coal Properties: Evaluating, Buying, and Selling meeting, St. Petersburg, Florida, March 26, 1998.
- *The Appraisal of Mineral Properties: Selecting the Appropriate Technique*, presented at Valuation Research Corporation's Pan American Affiliates Annual Meeting, San Juan, Puerto Rico, October 13, 1997.
- *Preparation of Coal Reserve/Resource Estimates – A Consultant's Perspective*, presented at the Eastern Section of the American Association of Petroleum Geologists and TSOP Joint Meeting, Lexington, Kentucky, September 29, 1997.
- *Overview of Western U.S. Coal Production and Export Potential*, presented at the 1997 Pacific Coal Forum, Park City, Utah, June 25, 1997.
- *U.S. Coal Mine Production and Productivity: How Did We Get Here and Where Are We Going?*, presented at the National Energy Modeling System, Energy Information Administration, Annual Energy Outlook Conference, Crystal City, Virginia, March 1997.
- *Montana's Coal Industry—What Does The Future Hold?* presented at the Montana Coal Council's annual meeting, Whitefish, Montana, July 16, 1996.
- *Coal Supply Developments in Montana—A Current Perspective*, presented at the Western Coal Council Spring Meeting, Gillette, Wyoming, May 1996.

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- *U.S. Coal Production for the Next Decade: Where Will It Come From & What Will It Cost?*, presented at the Mississippi Valley Coal Trade & Transport Council, Fourteenth Annual World Coal Conference, New Orleans, Louisiana, February 1996.
- *Overview of the Russian Coal Industry*, presented at Coal Outlook's Evaluating, Buying and Selling Coal Properties meeting in Pittsburgh, Pennsylvania, March 1994.
- *Environmental Site Assessments in the Acquisition of Industrial Mineral Assets*, presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Albuquerque, New Mexico, February 1994.
- *Investment Value Versus Fair Market Value, The Appraisal of Mineral Properties*, presented at the fall meeting of the Central Appalachian Section of the Society of Mining, Metallurgy, and Exploration, Inc., White Sulphur Springs, West Virginia, October 1993.
- *Environmental Site Assessments and Audits, The What, Whys, and Hows of Conducting Them*, presented at the annual meeting of the National Council of Coal Lessors, Inc., Washington, D.C., April 1993.
- *Investment Value Versus Fair Market Value, The Appraisal of Mineral Properties*, presented at the annual meeting of the Society of Mining, Metallurgy, and Exploration, Inc., Reno, Nevada, February 1993.
- *Acquisitions and Sales: The Consultant's Role on Each Side of the Fence—Buyer and Seller*, presented at the Annual Convention & Judicial Conference of the Kentucky Bar Association, Louisville, Kentucky, June 1991.
- A paper on exploration methods and procedures for coal, presented at the fall meeting of the Central Appalachian Section of the Society of Mining, Engineers of the AIME, White Sulphur Springs, West Virginia, October 1979.
- *Spring Field Trip Guide Book, Flynn Creek Structure, Jackson County Tennessee*, Safford Centennial Society, Tennessee Academy of Science – Geology Division Field Trip, with Fischer, F.T., March 1973.
- *Stones River Group Stratigraphy of Middle Tennessee*, presented at the Tennessee Academy of Science fall meeting, Murfreesboro, Tennessee, November 1971.
- *Upper Knox Stratigraphy of Central Tennessee and Southern Kentucky*, presented at the Geological Society of America annual meeting, Milwaukee, Wisconsin, October 1971.

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In the course of his consulting work, Mr. Stagg has authored or co-authored more than 500 unpublished reports covering the entire spectrum of his consulting activities.